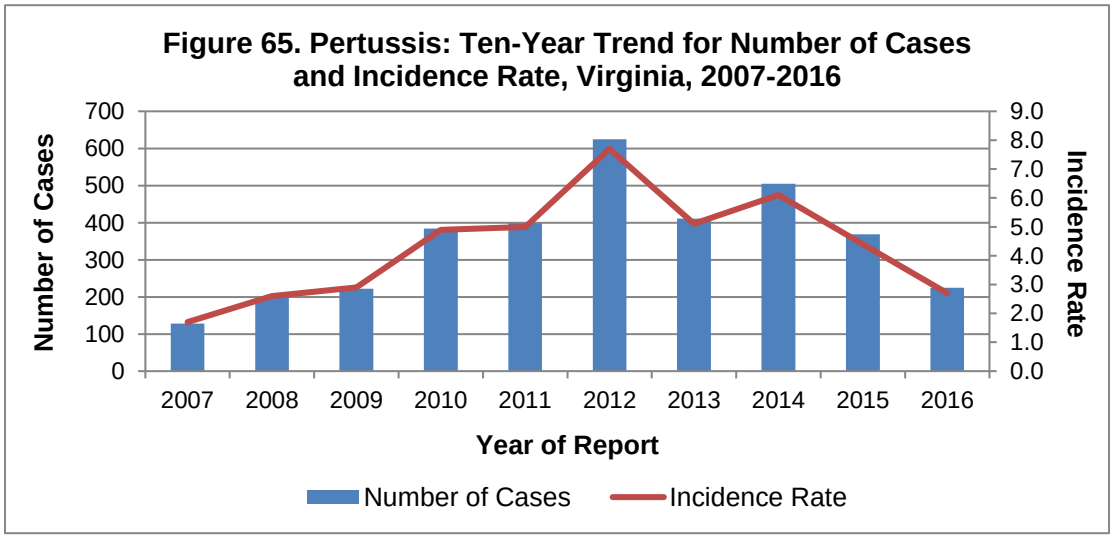
Pertussis

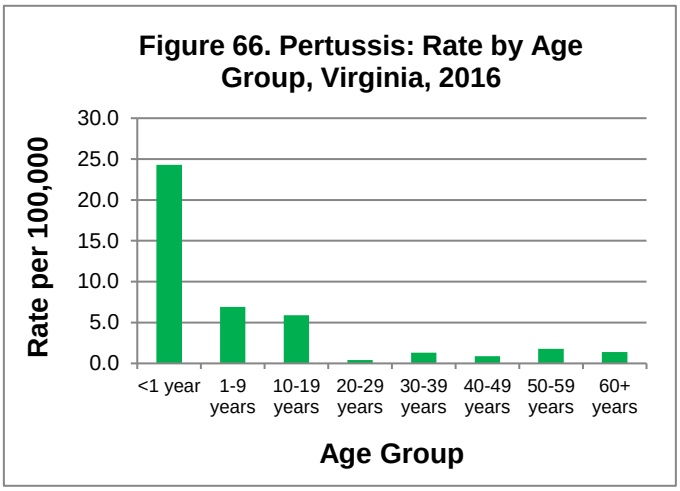
Agent: *Bordetella pertussis* (bacteria)
Mode of Transmission: Person-to-person transmission by contact with respiratory droplets from infected patients.
Signs/Symptoms: Insidious cough that progresses to paroxysmal coughing (i.e., severe, sequential coughs with difficulty inhaling) and may be accompanied by post-cough vomiting.
Prevention: Appropriate vaccine should be administered beginning at 2 months of age.
Other Important Information: Pertussis is also known as whooping cough. The occurrence of coughing fits can last up to 10 weeks or more. In vaccinated populations, the case-fatality rate is low. When deaths occur, they are generally in children less than six months of age who are too young to have been vaccinated.

Pertussis: 2016 Data Summary	
Number of Cases:	225
5-Year Average Number of Cases:	463.2
% Change from 5-Year Average:	-51%
Incidence Rate per 100,000:	2.7

In 2016, 225 cases of pertussis were reported in Virginia, which represents a 51% decrease from the five-year average of 463.2 cases per year (Figure 65). This is consistent with the cyclical trend of pertussis with peaks and valleys every three to five years, and can be further observed by the reduction of cases since 2014. The overall increase in cases over the past 20-30 years may be attributed to increased awareness of pertussis, improved and more frequent diagnostic testing, increased circulation of the bacteria, and waning immunity in all age groups. While vaccination against pertussis is recommended for all ages, those receiving whole cell vaccine appear to have longer lasting protection compared to those that received only the acellular vaccine, given to those born after 1996, as demonstrated by incidence rates by age.



Incidence rates were highest among the three youngest age groups (Figure 66). The rate was noticeably higher in the less than one year age group (24.3 cases per 100,000), followed by the 1-9 and 10-19 year age groups (6.9 and 5.9 cases per 100,000 respectively). Race information was not reported for 30% of cases. Among those with race information, the incidence rate for the white population (2.3 cases per 100,000) was more than twice the rate in the black population (0.9 cases per 100,00) and "other" race population (0.8 cases per 100,000). Incidence rates were higher for females (3.0 cases per 100,000) compared to males (2.3 cases per 100,000).



Pertussis cases occurred in every region of the state, with the highest incidence rate being reported from the northwest region (6.5 per 100,000), followed by the southwest region (4.6 per 100,000). Rates in the remaining three regions ranged from 2.1 to 1.0 per 100,000. Incidence by locality can be seen in the map below. Cases of pertussis followed a seasonal trend, with more cases occurring during the cold weather months of the fourth quarter (89 cases, 40%). In 2016, seven pertussis outbreaks were reported. Four of those outbreaks occurred in the northwest region. Schools were the most common (85%) outbreak setting. The number of cases associated with each outbreak was low and did not impact the rate for any age group as seen in past years. No deaths from pertussis were reported in 2016.

Pertussis Incidence Rate by Locality
Virginia, 2016